ABSTRACT OF THE DISCLOSURE

A quantization error compensation includes a dividing unit to divide an input current image signal into a first high-frequency signal and a low-frequency signal; a changing unit to replace bits of the first high-frequency signal with a predetermined signal to output a second high-frequency signal; an adding unit to add the low-frequency signal and the second high-frequency signal to create a composite signal; a quantization unit to cut n number of bits of the composite signal and to output the cut composite signal and the n number of bit signal; an equalizing unit to output a brightness equalizing value of the cut composite signal; a calculating unit to calculate a compensation value using the n number of the bit signal and a difference between brightness equalizing values with respect to a current and next brightness levels; and a compensation unit to add the compensation and the current brightness equalizing values.